

The Setting

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making salt were described to me, the housewife depends mainly on trade salt. Meals never consist of more than one course. Plates, forks and spoons are owned by all households but people do not always use them. While boiling is the most common way of preparing food, bananas, yams and breadfruit are usually roasted. Meat is often preserved by daily smoking, sometimes for long periods. There is a rule against eating meat 'in lent' and this is kept very strictly, but probably for traditional religious reasons to be discussed later. The main drink with meals is a soup consisting of the water in which the vegetables and herbs were cooked.

Foraging. A good deal of plant and animal food is obtained from foraging, especially in the tropical rain forest which covers most of the Northern District. Among foraged animal foods I would mention especially grubs, frogs, snails, rats, bush eggs and lice. Foraged plant foods are especially valued during the dry season when roots, leaves and fern fronds may make up part of a meal. Savoury herbs and leaves, however, are collected at all times of the year. Some food plants, though growing in the forest, are owned by individuals so that the gathering of these plants may be better described as harvesting than collecting. The most important are the *muga* and *puga* nut, sago, breadfruit, wild fig, and fruiting pandanus.

Hunting. According to Waddell and Krinks, about two man-hours weekly are spent on hunting (3.7 hours by men and 0.3 hours by women). Hunting patterns on the Mount Lamington foothills differ widely from those on the alluvial plains where kunai grass is widespread. On the foothills, there is hunting in reverted gardens and in very limited areas of virgin bush. The usual quarry consists of small marsupials and birds. If a pig is encountered, it is invariably a village pig whose owner has a claim to the carcass. The game population was virtually exterminated after the introduction of guns in the 1950s. In the kunai country, on the other hand, hunting land is abundant. The technique is by firing the kunai so that the animals can be shot when they escape. Such a hunt requires a large number of men who ring the burnt-over area. Not only marsupials but also pigs are killed, either by gunfire or by being roasted alive in the kunai grass. By no means all animals killed in the fire are retrieved. Fires tend to get out of hand and to spread over surrounding bush land which then is often covered with kunai grass and so is useless for purposes of cultivation.

Fishing. The supply of fish has suffered greatly with the introduction of snorkels after the Second World War, as this equipment enabled the Orokaiva to fish out their rivers almost completely in a very short time. Fish is still an important resource, however, in the lower reaches of the huge rivers which run through the Northern District: Kumusi, Ambogo, Girua, Sambogo, etc. In Inonda, the village studied by Crocombe and Hogbin (1963) and Waddell and Krinks (1968), 3.8 man hours per week are spent on fishing, mostly with spears, and the product is used not only for consumption but also for trade. (Inonda people also trade meat and bush eggs.) Many of the villages near the mountain, such as Sivepe, have very little fish. Apart from a few eels and crabs, the rivers contained a small supply of two-inch-long fishes caught in April with a small hand-net used as a scoop. (See Williams 1930:53 for description.)

Animal Husbandry. There are three kinds of domestic livestock: pigs, dogs and fowls. Every man still has one or more small dog which he uses for hunting

241 standards of subsistence agriculture.¹ Their own property totals
311 138 acres.

c. Hunting and fishing

224 These pursuits add variety to the diet but provide comparatively
[136] little food. Most of the game surviving in the area is small and
there are no large fish to be found in the mountain streams. Small
marsupials such as the cuscus, bandicoot and, more rarely, the land
wallaby, together with flying foxes and birds are the main sources
of animal protein. Nets and hunting spears are generally used to
catch these animals after they have been flushed out by the
hunter's dog. Traps are seldom set for game but we were told this
formerly was a more common technique. Snare for the smaller
types of animal are often made by boys and one or two of the men.
Two members of the sample owned licensed shotguns and these were
very effectively and economically used. One of these men would
place his services at the disposal of anyone who supplied
cartridges for the gun; the other allowed a limited circle of
people to use his gun. The guns were frequently used for hunting
at night in the dry weather during our survey.

226 Neither of the two forms of concerted hunting common among
other Orokaiva (the drive towards a pig net and grassburning,
Williams 1930:43) is practised to any extent as there are few
wild pigs and little grassland in the area.

Spears and fine-mesh nets are used in local streams to catch
eels and the 7 types of small fish found. This task is shared by
men and women usually when the water is low during a period of
dry weather. They may search for fish with a net along the Soh
River wherever it passes through land held by a member of the
village, but the small rock dams built by a man to form pools
suitable for the use of the spear are made only where the river
passes through his own land.

¹ This requirement is 2.2 acres per capita. Barrau (1958:75) says
that 2.5 to 5 acres per capita are sufficient for this type of
agriculture in Melanesia, assuming the average area of garden is
0.25 acres and that the duration of bush fallow ranges from 10 to
20 years. In March 1951, 40 square miles of unrestricted land were
considered suitable for resettling 4,300 of the survivors of the
recent eruption (Plant 1951:4; Belshaw 1951:9). It was felt that
these 5 acres per capita were enough only to meet the immediate
requirements of traditional subsistence gardening for the next few
years. (It was well-wooded and appeared 'most productive' and
easily accessible by road.) Considerable population increases were
anticipated.

423 The only local hunting land held by Sivepe people is that held
[224] by individuals as gardening land. A villager may hunt or fish on
[226] the land held by members of any group in the village and in fact
often strays further afield than this 'village land' without
attracting the attention of other groups. A man may, without
consulting others, invite a kinsman from another village to hunt
or join in a fish drive with him but no hunting parties involve
the assembly or co-operation of larger groups. A man wishing to
hunt on the land of one of his kinsmen in another village would
consult his kinsman first.

d. Livestock

235 Apart from the game available to the hunter, there are only
[231] 2 sources of fresh meat available, the domestic pig and fowl.
Six householders own a total of 13 fowls which were either bred
or bought by their owner. They are valued mainly as an asset for
times of feasting and only to a limited extent for egg production.
They are allowed to run loose in the village during the day but
are enclosed in shelters at night for protection against dogs.

231 Like fowls, pigs are fed by women mainly on scraps but they
find much of their food by roaming in the bush and grazing in old
gardens. They have complete freedom of movement within or outside
[241] the village during the day and in some instances only are they
housed in pens during the night. As a result, they are a constant
threat to gardens which are not thoroughly fenced; their movements
are a frequent source of dispute and require the gardener to
exercise care in siting his garden and sometimes to devote
considerable time waiting there to attack a pig which has been
frequenting the area.

[43] Of the 24 pigs or piglets claimed by 7 of the 12 householders,
[426] 15 were bred by them and the rest received in gift exchanges;
none was inherited. The only longstanding debts admitted or
claimed by members of the sample were in terms of pigs.

[146] There is little animal protein in the villagers' diet; some
fresh meat and smoked meat or fish is purchased at Saliho market
or from vendors travelling to the market - this source of meat
seems to be quickly becoming reasonably accessible (E. Waddell:
personal communication), but wild pigs - a very important source
in many other Orokaiva areas - are rare and the area for hunting
restricted. It would be feasible to take steps to modify any
lack of animal protein by increasing stock numbers and improving
their quality, but this would involve the introduction of new
strains and, to maintain any increase or improvements, husbandry
techniques would need to be refined. At present parasites take

[657]¹ About 50 Berkshire boars were distributed to Village Constables
among the groups affected by the Mt Lamington eruption.

24 papaws, bananas, sugar-cane and edible pitpit (*Saccharum edule*). No rotations are practised, but a garden may be gradually extended so that the period between initial planting and final abandonment may be as much as two years; plants such as banana and papaw may survive longer.

Taro is liable to be adversely affected by a lack of soil moisture during the dry season, and at this time people resort to sago or breadfruit¹ and foraging.² Yams and *Xanthosoma* are also more important at this time, since the former can be stored for many months in specially erected yam houses and the latter can remain in the ground for some time without deteriorating.

[222] In Sivepe, animal protein does not form a regular or quantitatively significant part of the diet. The principal sources is the domestic pig, and birds and small marsupials which are hunted. In Inonda and other areas more low-lying than Sivepe, rivers are larger and contribute considerable quantities of fish to the diet, while hunting for pigs, wallabies and other marsupials and birds is also more profitable than in the more densely settled areas.

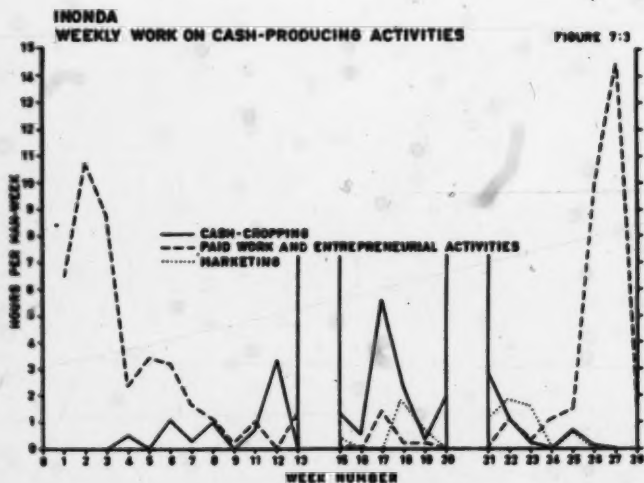
[222] Since about 1890, new subsistence crops, including sweet potato, manioc, *Xanthosoma*, corn, papaw, sweet banana, pumpkin and water melon have been introduced. The Mt Lamington people claim that yams and sago also are very recent introductions into their area. The fruits are consumed mainly as refreshments, but the vegetables have become important in the diet. Sweet potatoes need drier soils than taro and they mature in about three months. They, with yams and *Xanthosoma*, are often planted in special gardens, known as 'saga', as distinct from the ordinary taro gardens, called 'taro'. The sago palm is still uncommon in the Mt Lamington area and not everyone is skilled in the extraction of the flour. Its leaves have, however, displaced those of the bamboo as the principal roofing material.

43/45 (ii) Exchange. The most common transactions are the daily exchanges of food between the households in any Orokaiva settlement. This may be unprepared, cultivated or forest produce distributed on return from the gardens or it may be freshly cooked food given at the time of the evening meal. People also frequently share food, drink or tobacco while working together or on a journey. They do not record these exchanges and each household is assumed to be in a long-term equilibrium with the others.

¹ Breadfruit is common only in the inland areas.

[224] ² Particularly for edible leaves and shoots, which are known by the same Orokaiva name (*ina*) as pitpit.

³ Such gardens are often only roughly cleared and not weeded, thus reducing labour.

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222 The gathering of forest plants receives more attention during
 462 the dry season to compensate for lower garden production. The
 262 increased dietary significance of such plants at this time is,
 perhaps, understated in Table 7:3, since women often collect green
 leaves beside paths while walking to or from other activities and
 such gathering may not be recorded. In addition, a considerable
 224 amount is gathered by children. Hunting also increases during the
 221 dry season, with the increased number of wild pigs. However, a
 [410] significant factor in 1964 was the acquisition of a shotgun in July
 by the leading man (with financial assistance from others, who
 thereby acquired rights of use). From this time, hunting to obtain
 meat for both food and marketing increased, becoming most popular
 during period III when marketing also was most frequent. Due to
 the drop in water levels, the time devoted to fishing during the dry
 season is much less than in the rest of the year, but over the year
 as a whole, more time is spent in it than in any other single activity.

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Plate 7. Women spend many hours making string bags.



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Plate 8. Men from Inonda and Mosou villages repairing a large fishing net preparatory to an all-night fishing expedition.

ancillary tasks, other tasks unrelated to the main task, cooking and washing. 461

The activity observed most frequently was forest clearance. Over twelve occasions, the main task occupied 44 per cent of the total time. Due to the intensive and exhausting nature of the work, resting and eating occupies one-quarter of the time. For the same reason, almost one-third of the time spent on sago-making is in resting. Sago-making is the most intensive of all the activities practised by Inonda people: the observed occasions have a mean duration of over eight hours, 50 per cent of which is spent on the main task of producing the starch. Subsistence gardening tasks are in general less intensive than sago-making or clearing: travelling to the place of activity accounts for a higher proportion of the time, and work on the main task and other tasks amounts to less than half the total. Resting, however, accounts for less of the total than it does with sago-making. The planting and harvesting of taro appear to involve the most intensive work in gardening.

Overall, time spent working on all tasks as opposed to time spent resting or travelling appears to be between 50 and 60 per cent of the total. There is no significant difference between cash croppers and non-cash croppers. The latter tend to spend a greater proportion of their time in travelling - perhaps because they are mostly older people. Time saved in travelling by cash croppers seems to be used as much for leisure as for productive work.

The nature and size of work groups

Most activities are carried out by individuals working alone (see Table 7:15), although husband and wife often perform separate tasks in the same garden. Tasks in food gardens are rarely performed jointly: only in harvesting yams and fencing does the mean size of work group reach even 1.5 individuals. However, certain other subsistence activities do involve larger work groups. Of these, sago-making involves the largest mean number of people, since a sago-palm contains enough food to maintain several families for some weeks and it requires intensive labour to extract the starch before it spoils. Thus, those who decide to harvest a palm almost invariably call on others for assistance.¹ Spear-fishing is often undertaken by individuals alone, but groups of men or a number of households may fish together at a particular place. The largest fishing groups occur on the rare occasions (twice during the survey) when large nets are used. At such times people from several villages (Inonda, Nosou and Ijika) may collaborate to spread the nets (one from each village) across the river, to construct temporary dams of

¹ See p. 260. A

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476 branches and to drive the fish into the nets. On both occasions during the survey over twenty people were involved. Operations such as these are initiated by the older men. Participation is voluntary and seems to be based on residence as much as kinship.

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476 Construction of houses generally involves some collaboration in erecting the timber frame and in preparing roofing sheets from sago-palm leaves, but much of the construction is carried out by the houseowner alone. When assistance is received, it may be from a wide range of kin, including agnates, matrilineal kin and affines. The main reason for the size of work group shown as involved in construction at Inonda is the erection of the copra-drier when all the men in the village collaborated.

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[245] It is worthy of note that, except for fishing and sago-making, all activities involving larger work groups are non-traditional activities directly associated with the monetary sector. The largest work groups occur in copra-making and the next largest in cultivation of coffee. As described above, copra-making was initiated by the entrepreneur as his own project but subsequently others combined to make it a village project. Cultivation of coffee is carried out usually by members of the household that owns a garden, sometimes assisted by other kin who have no cash crops or by young unmarried men. There is, then, a clear differentiation between traditional and post-contact activities in terms of the organisation of work groups.

The activity patterns of selected individuals (see Table T:18)

166 Bemba. This man is unmarried, aged 31 and lives in the household of his elder brother. He reached standard V at Ururu mission school and began training as an aid post orderly at Salfu hospital, but left after eleven months, feeling that his current conditions and future prospects were not satisfactory. He then lived for some months with a relative of the same lineage at Ijika, returning to Bemba for several weeks during periods I and II and remaining permanently from late August onwards. In total, Bemba was absent for 86 days, 92 per cent of which were on visits either to his lineage brother or, for shorter periods, to other relatives. For 3 of the remaining 7 days he was sick and stayed at Mahema village, 2 days were spent at a feast, 1 at a party and 1 looking for work at Popondetta.

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[464] Bemba's observed activity patterns seem fairly representative of the behaviour of young unmarried men in the area. Probably his attitudes are also quite widely shared; although he frequently helps his brother and other kin in Inonda and other villages in subsistence tasks and cash cropping and will almost certainly settle in the village when he marries,

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he expresses at present a preference for paid work and spent over 37 hours, in addition to one full day, seeking employment. However, the only paid work he obtained was on the entrepreneur's construction contract at the airstrip. Since the completion of road construction in the area, paid work other than labouring for settlers has been difficult to obtain. Bemba has sought work requiring responsibility, for instance, as a stevedore, rather than casual labouring, but even in Popondetta responsible work is rarely available and there are many other men of similar age and with similar or better educational qualifications competing for the same few vacancies.

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[22C]
Bemba is active for an average of 49.5 hours per week. His most time-consuming task is fishing, usually with friends of the same age, and this is probably regarded as recreation as much as productive work. It accounts for 30 per cent of the week's activities. Sage-making is also important in the dry season. In the category of other food-producing activities over one-third of the time spent in subsistence gardening is in planting taro, sweet potato and minor crops and one-half in clearing and harvesting. During period III, he made a garden independently of his brother for the first time. This was intended for his brother's wife's use and served as a return for the food he received as a member of the household. Productive subsistence activities account for 21.4 hours a week.

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Bemba's main cash-producing activity is paid employment. He also assists his brother and others in their coffee gardens and spends some time in marketing. In fact, he never acquired any cash in the Popondetta market: he threw away unsold sigore (limes) and gave unsold bush-turkey eggs to a friend. However, in November, he caught a 4 ft long crocodile in the Gira River and sold it to a Chinese merchant in Popondetta for \$4.00. The 2.1 hours spent on purchasing are partly on his own account and partly as a service to others, since purchasing provides a reason for travelling and meeting friends.

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[77C]
Apart from the category of other food-producing activities, social activities consume most time during the week, with a slightly higher proportion spent on visits than on organised feasts and parties. These visits are brief and distinct from those considered in discussing absences and are one of the most typical aspects of the behaviour patterns of young men. A closely related activity is church attendance, which occupies over an hour a week because Bemba often walks to services at Ijika, again in order to meet his friends. His visits to the aid post take up more time than the average spent even by women with

221 Snares and traps are set at strategic points to catch wild pigs. A snare consists of a wire noose attached to a sapling which is fastened under tension to a triggering device. Snares are usually concealed along paths in abandoned gardens. The traps are of two types: the pit-trap which is dug two to three feet deep along a path or near a hole in a fence and has old spear heads and sharpened hardwood stakes "planted" in the floor; and the jump-trap which consists of hardwood spikes set at an angle in the ground with the points facing a low "gate" in the fence, so that a pig which jumps the "gate" impales itself on the spikes.

226 There is some fishing in the local rivers throughout the year, but most fish are caught during the dry season when the rivers are low and the water is clear, and spearing is then easy and profitable. The people forage for firewood, wild yams, bush cabbage, honey and other foods. Although these products may make an important contribution to diet, they seem to provide only a small proportion of the total volume of food consumed.

131 Boundaries: The external boundaries of the Inonda lands are known in detail where they follow or cross the Sambogo and Girua rivers, and where they cut the main road. Elsewhere the people recognise only general boundaries which follow hill-tops or other natural features. Within Inonda the Girua and Sambogo rivers and their tributary creeks form the most important boundaries and each area of land is known by some physical feature, frequently the name of the adjacent creek. On the southern side the land extends back into the mountains in some cases to include the whole watershed of the creeks which feed the Sambogo, and in others to meet the boundaries of the Mosou and Tandai'undi lands.

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423 Each of the lands framed by the creeks is divided between the lineages. Boundaries are marked by trees (especially hauga and popona) and other natural features. The gardens of different families and of different individuals within families are marked, sometimes by rows of crotons, but more usually by continuous lines of dead saplings laid end to end between trees or stumps. Individual gardens are not named but are referred to by the name of the person who plants them.

423 transfer at a feast shortly after the grandson finished his school-
621 ing. Along with the rights he was given the obligation to look
221 after the land and ensure that nobody else uses it. In fact, he
informs us, the only person whom he permits to hunt there is
his adoptive father.

423 All Inonda people, along with all members of the
221 Andiriha and Jego'undi clans who live elsewhere, claim the
right to hunt on the 'ancestral' land at Aramba. This right is
in fact seldom exercised, though the Inonda people say that they
have paid visits to Aramba on several occasions in recent years
to collect fruits and nuts, and have done a little hunting and
foraging during their stay.

During the dry season hunting drives are sometimes
held on the Inonda grasslands which are burned off for the
[628] purpose. As a considerable number of people are needed to
undertake such a drive, neighbouring villages are invited to par-
ticipate in the hunt.

423 Fishing rights: For the purpose of fishing rights,
221 the Girua river is divided into sections, each of which is
621 associated with a particular local group. Rights to the section
running downstream from a point near the Inonda airstrip are
held by the people of Doboduru village. From Inonda airstrip
upstream to a point near the new Girua bridge, rights are held
by the Inonda people. Upstream from the new Girua bridge as
far as Hombers creek, rights are held by the Warau'undi clan
and thereafter sections are held by the Ajoro, Sewa and Bofu
people respectively. The boundary of each section of the river
is also the boundary of the surrounding land.

423 The Inonda portion of the river is held jointly by the
221 Andiriha and Jego'undi sub-clans and any primary member of
621 either sub-clan may fish there. Men who are secondary or
contingent members of the Inonda sub-clans, and the husbands
of women who are contingent members, have a limited right to
fish in the Girua river, for while they cannot fish there without

4/23 permission, custom does not permit of permission being withheld
unless the circumstances are exceptional. On two occasions
2/26 during our stay the river was fished by men married to
6/14 Andiriha women, and once by a contingent member of the
Andiriha sub-clan who lives at Hobota. No payment is made for
this privilege, not is any part of the catch given to the host
village.

4/23 On rare occasions Andiriha people from distant
2/26 villages have been given the right to fish in the Girua river to
6/28 obtain food to garnish a forthcoming feast. The procedure is
similar to that outlined for hunting under the same circum-
stances. Adjacent to the Inonda land on the north side of the
Girua river is a government resettlement scheme. The settlers,
most of whom are strangers to the area, sometimes fish in the
river after obtaining permission from the Inonda elders. No
direct payment is made but there are indications of other forms
of reciprocity between the settlers and the village.

2/26 Rights to that part of the Sambogo river which flows
4/23 through Inonda are not held jointly by the sub-clans. There are
5/14 five divisions in the river, each of which is held by one or other
6/13 of the lineages. One particular pool is held by an individual,
the sole surviving child of the man who is said to have acquired
[4/25] rights to it by clearing the adjacent virgin bush and gardening
there. Since the Paru lineage died out the rights to their part
of the river have been taken over by the Joremba'embo. Men
often fish alone, but frequently take other villagers (not
[6/21] necessarily of the same lineage) to fish with them. When a fish
drive is held during the dry season all the villagers fish
together.

The rights of secondary and contingent members in
the Sambogo river are held only in relation to that particular
part of it which is associated with the lineage to which they trace
their relationship. One permissive member of the Andiriha
sub-clan is allowed to fish in either of the places where his
daughters' husbands have rights. Small groups of women some-
times fish in places where their husbands' lineages hold rights.

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423 Only three Inonda men exercise fishing rights outside Inonda. The first two are members of the Jego'undi sub-clan who were given rights to fish in the Sambogo river from Ere creek to Mosou village by their mother's brother along with the hunting rights already described. The part of the river concerned is adjacent to the part held by the Andiriha sub-clan. As Mosou village is situated close to the Jego'undi portion of the river, some Mosou men who have distant kinship connections with the Jego'undi are permitted to fish there. All parties confirm that no payment is made for this privilege but we have observed that the Mosou people make gifts of betel nut and sago to the Jego'undi. The Inonda councillor was given exclusive rights to fish part of the Sambogo river (adjacent to the Andiriha part but at the other end from that held by the Jego'undi) along with hunting rights to the surrounding lands.

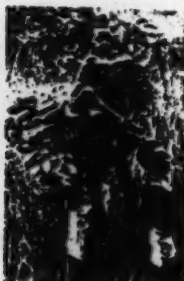
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423 Cash crops: Only small areas of land are being used for cash cropping (see map page 104). In 1955 three households planted a total of 801 trees on 1.85 acres of land situated near the Girua river on Hohota lands and these trees are now in production. They are planted on land to which the planters previously held only permissive rights of occupancy, although since 1961 these rights have been strengthened by registration under the Higaturu Local Government Council land registration scheme (which is explained in Appendix A). The problems associated with this land are discussed on pages 72-75. In 1961 another man planted 0.41 acres of cocoa on Inonda land in which another lineage has prior rights, but this will not produce for some years yet. A fifth man has staked out 0.6 acres of land at Inonda which belongs to a lineage other than his own, but because of the resultant dispute he will probably not plant coffee on it as originally intended (for details see page 75).

245 The small amount of coffee produced is sold in the parchment stage. If it is assumed that each tree will produce half a pound of parchment coffee annually then total production for the village will be approximately 400 lbs. The income from this, if parchment coffee is sold at 1/- per pound, would be only £20.0.0 per year for the whole village. Details of production during the past three years are shown in Table 4.

A [See Category 102, p. 109--Analyst]

	Men	Women	Average
461 221 462 [224] [221] [222] <u>Hunting, fishing and foraging:</u> Taken as 25% below pilot survey (as hunting increased during mourning and fishing increased during dry season; foraging not fully accounted for as often done in the course of other activities). Hunting all by men, fishing mostly by men, foraging mostly by women	30	8	19
[242] <u>Housebuilding:</u> House rebuilt about every 4 years. Assuming that it takes about 16 man-days to build a house.	4	-	2
<u>Total subsistence activities:</u>	74	132	103
[249] <u>Cash cropping:</u> Assessed time needed to maintain and harvest area planted (1.85 acres) averaged over all adults.	6	6	6
<u>Council work:</u> Road work say 4 days per man per year.	4	-	2
<u>Church:</u> Services 2 hours per week, plus church celebrations 2 days per year.	17	17	17
<u>Sickness (including caring for the sick):</u> Based on survey period.	23	20	26
<u>Paid work:</u> Based on actual paid work undertaken so far this year.	72	-	36
<u>Total other activities:</u>	122	52	87
<u>Social obligations</u>			
<u>Death:</u> Based on 2 deaths per year in this village, each involving the equivalent of 10 days absence from productive activities; and 5 deaths elsewhere which concern Inonda people involving 3 days each.	35	35	35

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[Housewife carrying garden produce and firewood back to her village, a distance of up to four miles. Her load, excluding baby, is about 100 pounds.]

INTRODUCTION

- 433 THE traditional economy of New Guinea villages was radically different from our own. Whilst our economy is based upon the production of surplus goods which can be sold for profit, thus providing capital which in turn may be invested to produce greater profits, the key note of the New Guinea economy was self-sufficiency. Traditionally, the people of New Guinea were subsistence cultivators planting their food crops in small clearings in the forests and supplementing this food supply by fishing, by hunting the animals which live in the forests and on the grasslands and by gathering the edible produce of wild vegetation, notably sago. Only the simplest implements were available: stone axes with which trees could be laboriously felled or ring-barked; fire for burning-off the mass of felled timber, vines, and leaves; and sharpened sticks with which holes were made for planting seeds and cuttings. In only a few limited areas, notably the central highlands of the main island, was there any attempt at digging or cultivating the soil prior to planting; in most areas cuttings or seeds were planted in holes made directly in the cleared, ash-covered ground.
- [128] The burned clearing thus made and used for the growing of food crops is referred to in this book as a swidden.

- 433 Such an economy, in which there was no concept of saving and no profit motive, tended to be resistant to change; innovation was unnecessary. But with the coming of white men possessing a superior technology, an important change occurred; steel axes, knives, and spades
- [P-I-A)

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is maintained today because, the Yega say, it makes the work lighter if you have someone to gossip with, and to share a watermelon or a smoke during rest breaks. The effect is that, at any one time, many people of a sub-clan are using land to which they do not hold cultivation rights.

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The granting of temporary rights to plant a food crop is normal procedure. A right-holder frequently grants such rights to affinal kin of a different clan or even to an affinal kinsman from a neighbouring parish. An outsider granted such a right would *never* consider that he had any permanent right to Yega land. He would simply give the right-holder a gift or, if asked, would lend land in return.

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The Yega are coastal people and expert fishermen. Fishing is an exclusively male occupation and fish have always been an important food. Eleven reefs are known by the Yega to exist off their strip of coast; rights to fish over these reefs are held by the clans whose ancestors first discovered them. Any person who catches fish over a reef belonging to another clan must give a gift from his catch to the right-holders. Fish are caught by many different methods but the commonest nowadays is by skin-diving with a home-made spear gun and goggles made in Hong Kong.

SUBSISTENCE GARDENING

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The Yega gardening routine is similar to the general procedure described earlier. The main features are universal inter-planting of a wide range of food plants and a shifting-field system which provides a continuous supply of fresh vegetable food. Some special features of Yega agriculture are worth noting. These are:

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a) *The shifting-field cycle.* The average length of the fallow period for twenty-one swiddens investigated was 7.4 years. Such a figure is apt to be misleading. It tends to give the impression that New Guineans are much more organized than in fact they are. Some swiddens were fallowed for as little as two years... 'because my brother made his garden over there and I wanted to work near him!', while others had been left as long as thirteen years... 'because the soil isn't very good in this place.' Human factors as well as physical

[P.8-B)